

REMARKS

Formal Matters

Claims 1, 3-22, 25-30, 34-46, 48 and 50-57 are pending after entry of the amendments set forth herein.

Claims 1-57 were examined. Claims 1-51 were rejected. Claims 52-57 were allowed.

Applicant respectfully requests reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

The Telephone Interview

Applicants wish to extend their appreciation to the Examiner and his supervisor for the courtesy provided to Applicant's representative during the telephone interview of July 3, 2007. During the Interview, it was agreed that the proposed amendment of claims would overcome the grounds of rejection under 35 U.S.C. Sections 112, first and second paragraphs. However, no agreement was reached as to the rejections based on 35 U.S.C. Section 102.

This account is believed to be a complete and accurate summary of the interview as required by 37 C.F.R. § 1.133. If the Examiner believes that this summary is inaccurate or incomplete, Applicant respectfully requests that the Examiner point out any deficiencies in his next communication so that Applicant can amend or supplement the interview summary.

The Office Action

Claims Rejected Under 35 U.S.C. Section 112, First Paragraph

In the Official Action of May 31, 2007, claims 1-51 were rejected under 35 U.S.C. Section 112, first paragraph as failing to comply with the written description requirement. Regarding claims 1 and 46, although the Examiner agreed that paragraph 80 of the present specification discloses that the present invention does not miss good sequences that are bound/hybridized with the best members of the

labeled-target population, regardless of where they are located in the region, the Examiner nevertheless asserted that this does not appear to be a disclosure that the collation can be completely independent of a feature location, since the feature is presumed to be somewhere in the region. Applicant respectfully disagrees. Although the feature is presumed to be somewhere in the region, there is no presumption made as to the locations of the feature signals, except that they be somewhere within the region. Accordingly, it is respectfully submitted that the quality signals are located geometrically independently of any presumed feature location relative to the region.

Nevertheless, in order to advance the prosecution of the instant application, Applicant has deleted the phrase “geometrically independently” from claims 1 and 46 above. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1 and 46, and all claims depending therefrom, under this ground of rejection as being inappropriate.

Regarding claims 29 and 30, the Examiner the high quality signals are not identified geometrically independently of the locations from which the high quality signals originated, since they are located within the region. Applicant respectfully traverses. All signals are from the region. The selection of high quality signals is accomplished geometrically of any predetermined location or locations in the region.

Further, in order to advance the prosecution of the instant application, Applicant has deleted the phrase “geometrically independently” from claims 29 and 30 above. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 29 and 30, and all claims depending therefrom, under this ground of rejection as being inappropriate.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-51 under 35 U.S.C. Section 112, first paragraph as failing to comply with the written description requirement, as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 112, Second Paragraph

Claims 1-51 were rejected under 35 U.S.C. Section 112, second paragraph as being indefinite.

Regarding claims 1 and 46, it is respectfully submitted that the phrase “geometrically independently” has been deleted therefrom.

Claims have been reworded to recite “identifying a subset of the rank ordered output signals which are the quality output signals.

Regarding claims 29 and 30, it is respectfully submitted that the phrase “geometrically

independently" has been deleted therefrom.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-51 under 35 U.S.C. Section 112, second paragraph, as being indefinite, as being inappropriate.

Claims Rejected Under 35 U.S.C. Section 102(b) (Chen et al.)

Claims 1-5, 9, 15, 18-21, 23-25, 27, 29-34, 37, 41 and 45-50 were rejected under 35 U.S.C. Section 102(b) as being anticipated by Chen et al., U.S. Patent No. 6,245,517. During the telephone interview of July 3, 2007, the Examiner asserted that the area inside the cookie cutter or "target mask" of Chen et al. (see Fig. 3) could be considered the "chemical array image" and that Chen et al.'s described process would then read on Applicant's claims.

Applicant strongly disagrees. First, it is respectfully submitted that such an interpretation flies in the face of Chen et al.'s own description. For example, at column 5, beginning on line 32, Chen et al. indicates that some image processing is required prior to intensity measurement. "For instance, the image needs to be segmented into target patches, but this task is straightforward since the robot positions the cDNA targets in a predetermined manner." "The difficult image processing task is to identify the target site within the target patch (see Fig. 3)." Chen et al. goes on to disclose at column 6, beginning at line 16: "A target site is segmented from the target patch according to the following procedure. A predefined target mask is used to identify a portion of the target patch that contains the target site. The target mask is based on the geometry of the potential target area and can be constructed from specially tagged targets or other strong targets..." 'Once a target site is determined, gene expression is measured by the median of the target site minus the median of the background area (outside the target mask area). Accordingly, it is respectfully submitted that Chen et al. clearly predefines a target area within the target patch and that the pixels considered as the target must all be inside of the target area.

Further, it is clear that the target patch is the image that is being considered. The target site cannot be considered independently as an "array image", since Chen et al. also takes readings from pixels outside the target mask, see column 6, lines 23-25, and this is necessary in order to perform the disclosed "Mann-Whitney" procedure.

Further, Applicant has amended claims 1 and 46 above to more clearly define the region from which signals are read, and that the quality signals can be from anywhere within the region. Support for this amendment can be found, for example, in paragraphs [0073] – [0075] and [0080]. The target masks

of Chen et al. cannot properly be considered a region, since the target masks do not include all of the pixels of the array of Chen et al.

Claim 29 has been amended to further recite that method selects quality signals without the use of a template. Support for this amendment can be found, for example, at paragraph [0073] and throughout the specification. Further, claim 9 recites that output signals are read over the entire surface of the feature region that includes a feature surrounded by background region that separates the feature from other features on the array, and that the quality output signals can originate from anywhere in the feature or background region of the microarray feature region. As noted above, the signals of Chen et al. must be located within the target mask and cannot be located outside of the mask.

Claim 30, similar to claim 1, has been amended to recite means for reading output signals from all pixels of a region, and wherein quality output signals can be from locations anywhere in the region. As noted above, the signals of Chen et al. must be located within the target mask and cannot be located outside of the mask.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 3-5, 9, 15, 18-21, 25, 27, 29-30, 34, 37, 41, 45-46, 48 and 50 (claims 2, 23-24, 31-33, 47 and 49 having been canceled above, without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein) under 35 U.S.C. Section 102(b) as being anticipated by Chen et al., U.S. Patent No. 6,245,517, as being clearly inappropriate.

Claims Rejected Under 35 U.S.C. Section 102(e) (Shams et al.)

Claims 1-6, 8-12, 14, 18-25, 27-40, 43 and 45-51 were rejected under 35 U.S.C. Section 102(e) as being anticipated by Shams et al., U.S. Patent No. 6,731,781.

Applicant strongly disagrees. Applicant respectfully submits that Shams et al. discloses a method of the type referred to in the present specification, page 5, paragraph [0014] as a “cookie cutter” type of method where a mask, template or “cookie” is positioned within each area of the microarray that is laid out to have a feature deposited or written thereon. The abstract of Shams et al. discloses that the processor detects in each of the subgrids a center-representing pixel of a signal of a chemical material and an approximate radius of the signal. Further, Fig. 10, step 1000 and the description thereof describes the building of a circular template filter used for feature or spot finding. Figs. 11 and 12 also describe the geometrically based methods of use of a circle template, spot center finding and spot radius

finding. Column 15, lines 35-45, which were referred to by the Examiner, describe refining classification of pixels that have already been selected by outlining them with the circle, see column 15, lines 23-29. Accordingly, the only signals that can be classified as feature signals are those that are outputted from those pixels geometrically located within the circle.

Further, Applicant has amended claims 1 and 46 above to more clearly define the region from which signals are read, and that the quality signals can be from anywhere within the region. Support for this amendment can be found, for example, in paragraphs [0073] – [0075] and [0080]. The circle template of Shams et al. cannot properly be considered a region, since the template does not include all of the pixels of the array of Shams et al.

Claim 29 has been amended to further recite that method selects quality signals without the use of a template. Support for this amendment can be found, for example, at paragraph [0073] and throughout the specification. Further, claim 9 recites that output signals are read over the entire surface of the feature region that includes a feature surrounded by background region that separates the feature from other features on the array, and that the quality output signals can originate from anywhere in the feature or background region of the microarray feature region. As noted above, the signals of Shams et al. must be located within the circular template mask and cannot be located outside of the template.

Claim 30, similar to claim 1, has been amended to recite means for reading output signals from all pixels of a region, and wherein quality output signals can be from locations anywhere in the region. As noted above, the signals of Shams et al. must be located within the template and cannot be located outside of the template.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 3-6, 8-12, 14, 18-25, 27-30, 34-40, 43, 45-46, 48 and 50-51 (claims 2, 23-24, 31-33, 47 and 49 having been canceled above, without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein) under 35 U.S.C. Section 102(e) as being anticipated by Shams et al., U.S. Patent No. 6,731,781, as being clearly inappropriate.

Conclusion

Applicant submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

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The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10030524-1.

Respectfully submitted,

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